



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,523	01/16/2004	Paul Anthony Thomas	60130-1987;03MRA0008	7042
26096 7590 04/18/2008 CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009			EXAMINER KING, BRADLEY T	
			ART UNIT 3683	PAPER NUMBER
			MAIL DATE 04/18/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2
3
4 BEFORE THE BOARD OF PATENT APPEALS
5 AND INTERFERENCES
6

7
8 *Ex parte* PAUL ANTHONY THOMAS and PAUL ROBERTS
9

10
11 Appeal 2008-0173
12 Application 10/759,523
13 Technology Center 3600
14

15
16 Decided: April 17, 2008
17
18

19 *Before* WILLIAM F. PATE, III, TERRY J. OWENS and MURRIEL E.
20 CRAWFORD, *Administrative Patent Judges*.

21
22 PATE, III, *Administrative Patent Judge*.

23
24 DECISION ON APPEAL
25

26 STATEMENT OF CASE

27 The Appellants appeal under 35 U.S.C. § 134 (2002) from a Final
28 Rejection of claims 1, 4-19 and 21. Claims 2, 3 and 20 have been cancelled.
29 We have jurisdiction under 35 U.S.C. § 6(b) (2002).

30 The Appellants claim a disc brake assembly including a pad spring
31 having a laterally and downwardly extending lug. The lug includes an upper

1surface with a rounded edge that reduces the tendency of the pad spring to
2indent into the pad retainer (i.e. wedge into the pad retainer) which can
3impede movement of the brake pad and diminish braking performance.

4 Independent claim 1 reads as follows:

- 5 1. A disc brake assembly comprising:
6 a brake caliper having an outboard side;
7 a brake pad;
8 a pad spring including a spring planar region, wherein the
9 pad spring is substantially elongate and defines a longitudinal
10 direction; and
11 a pad retainer including a retainer planar region
12 positioned at a first radius to restrain radial movement of the
13 brake pad, wherein the pad retainer is secured to the outboard
14 side of the brake caliper at a second radius that is less than the
15 first radius, the pad retainer further including a crook at an end
16 of the retainer planar region,
17 wherein the spring planar region engages the pad
18 retainer, thereby defining an engaging region of the spring
19 planar region, and
20 wherein a lateral edge region of the engaging region
21 adjacent to the outboard side of the brake caliper is defined by a
22 laterally and downwardly extending lug having an upper
23 surface, wherein the upper surface defines a rounded edge.
24

25 Independent claim 13 also recites a disc brake assembly including a
26pad retainer and a pad spring having a laterally and downwardly extending
27lug that incorporates an upper surface with a rounded edge. Independent
28claim 21 recites a method of making a disc brake assembly including a pad
29spring with a laterally and downwardly extending lug having an upper
30surface with a rounded edge.

1 The prior art relied upon by the Examiner in rejecting the claims is:

2Heinz 4,049,087 Sep. 20, 1977

3Forni EP 0 703 378 A1 Mar. 27 1996

4

5 The Examiner rejected claims 1, 4-19 and 21 under 35 U.S.C.

6§ 103(a) as unpatentable over Forni in view of Heinz.

7 We REVERSE.

8

9

ISSUE

10 The sole issue raised in the present appeal is whether the Appellants
11have shown that the Examiner erred in rejecting claims 1, 4-19 and 21 as
12unpatentable over Forni in view of Heinz.

13

14

PRINCIPLES OF LAW

15 “Section 103 forbids issuance of a patent when ‘the differences
16between the subject matter sought to be patented and the prior art are such
17that the subject matter as a whole would have been obvious at the time the
18invention was made to a person having ordinary skill in the art to which said
19subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727,
201734 (2007). The question of obviousness is resolved on the basis of
21underlying factual determinations including (1) the scope and content of the
22prior art, (2) any differences between the claimed subject matter and the
23prior art, (3) the level of skill in the art, and (4) where in evidence, so-called
24secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18

1(1966). In *KSR*, the Court explained that “it will be necessary for a court to
2look to interrelated teachings of multiple patents; the effects of demands
3known to the design community or present in the marketplace; and the
4background knowledge possessed by a person having ordinary skill in the
5art, all in order to determine whether there was an apparent reason to
6combine the known elements in the fashion claimed by the patent at issue.”
7*Id.* at 1740-41. The Court noted that “[t]o facilitate review, this analysis
8should be made explicit,” but “the analysis need not seek out precise
9teachings directed to the specific subject matter of the challenged claim” *Id.*
10at 1741, citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).

11

12 ANALYSIS

13 The Examiner rejected all of the pending claims as unpatentable over
14Forni in view of Heinz (Ans. 3). Forni discloses each and every limitation
15of these claims except for the “laterally and downwardly extending lug
16having an upper surface, wherein the upper surface defines a rounded edge”
17(Ans. 3). The Examiner relies on Heinz to cure this deficiency of Forni.
18Heinz discloses a friction pad assembly including a leaf spring (i.e., pad
19spring) with lateral and downwardly extending legs 5, 6 (i.e., lugs), the legs
20having a rounded edge (Heinz: Figs 1-3A; Col. 3, l. 5-Col. 4, l. 9). The
21Examiner states that it would be desirable to provide the legs of Heinz to the
22spring of Forni to facilitate attachment of the pad spring and to improve
23security and retention of the pad spring on the brake pad as taught by Heinz
24(Ans. 3-4; Heinz: Col. 2, ll. 9-22; Col. 5, ll. 32-43). Thus, the Examiner

1argues that it would have been obvious to one of ordinary skill in the art to
2provide the legs of Heinz on the spring of Forni and that these claims are
3unpatentable (Ans. 6).

4 With respect to claims 1, 4-12 and 14-19, the Appellants argue that
5one of ordinary skill would not be motivated to modify the pad spring of
6Forni to include the legs disclosed in Heinz. In particular, the Appellants
7argue in the Appeal Brief that Forni already provides a mechanism for
8retaining the spring and that material and manufacturing cost would be
9increased if such legs are provided (Appeal Br. 5 and 6). The Appellants
10also argue that the number of parts would undesirably increase if such legs
11are provided in order to accommodate the thicknesses of different backplates
12(Appeal Br. 6). The Appellants further argue that the potential for cracking
13of the legs exists due to the large angles in which the legs are bent in Heinz
14(Appeal Br. 6). We do not find these arguments of the Appellants
15persuasive for the reasons clearly set forth by the Examiner in his Answer
16(Ans. 5 and 6). In the Reply Brief, the Appellants also provide counter
17arguments to the Examiner's Answer, but we find these counter arguments
18unpersuasive as well (Reply Br. 2 and 3).

19 However, the Appellants further argue in the Reply Brief that in the
20braking arrangement of Heinz, the relationship of the pad spring with the
21caliper and the brake pad is reversed as compared to the pad spring of Forni
22(Reply Br. 2). More specifically, the Appellants note that in Heinz, the
23central portion of the pad spring is held fixed to the backplate via the legs 5,
246 while the distal ends 3 of the pad spring engage a caliper member 12 to

1bias that brake pad (Heinz: Fig. 7; Reply Br. 2). This is opposite to the pad
2spring of Forni in which the distal ends of the pad spring 18 are held fixed to
3the backplate 10 and in which the central portion of the pad spring contacts
4the pad retainer 32 to bias the brake pad (Forni: Fig. 1; Reply Br. 2). Thus,
5the Appellants contend that if the legs of Heinz were provided on the pad
6spring of Forni and used to further secure the pad spring as suggested by the
7Examiner, both the distal ends and the central portion of the pad spring
8would be fixed to the backplate, thereby preventing flexing of the pad spring
9and preventing proper functioning thereof (Reply Br. 2 and 3). Hence, the
10Appellants argue that one of ordinary skill would not be motivated to
11provide the legs of Heinz on the pad spring of Forni (Reply 3).

12 We are persuaded by the above argument and agree with the
13Appellants that one of ordinary skill would not combine Forni and Heinz in
14the manner suggested by the Examiner because such a combination will
15result in an inoperable pad spring. Therefore, the Appellants have shown
16that the Examiner erred in rejecting independent claim 1 as well as claims
174-12 and 14-19 ultimately depending from claim 1.

18 The Appellants do not provide detailed arguments regarding
19patentability of independent claims 13 and 21, but instead, rely on the
20arguments presented relative to independent claim 1 (Appeal Br. 7). Like
21claim 1, the independent claims 13 and 21 both recite a laterally and
22downwardly extending lug having an upper surface, wherein the upper
23surface defines a round edge. These claims stand rejected based on the same
24combination of Forni and Heinz discussed *supra* relative to independent

26Appeal 2008-0173
27Application 10/759,523
28
29

1claim 1. Therefore, for the same reason discussed relative to claim 1, the
2Appellants have shown that the Examiner erred in rejecting in independent
3claims 13 and 21 as well.

4

5 CONCLUSIONS

6 The Appellants have shown that the Examiner has erred in rejecting
7claims 1, 4-19 and 21 as unpatentable over Forni in view of Heinz.

8

9 ORDER

10 The Examiner's rejection of claims 1, 4-19 and 21 is REVERSED.

11

12 REVERSED

13

14

15

16

17JRG

18

19

20CARLSON, GASKEY & OLDS, P.C.
21400 WEST MAPLE ROAD
22SUITE 350
23BIRMINGHAM, MI 48009
24